



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/718,753

11/21/2003

Alexander Hoffmann

16274.171

1445

22913

7590

09/23/2010

Workman Nydegger
1000 Eagle Gate Tower
60 East South Temple
Salt Lake City, UT 84111

EXAMINER

NOBAHAR, ABDULHAKIM

ART UNIT

PAPER NUMBER

2432

MAIL DATE

DELIVERY MODE

09/23/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/718,753	Applicant(s) HOFFMANN, ALEXANDER	
	Examiner ABDULHAKIM NOBAHAR	Art Unit 2432	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 12-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 12-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is in response to applicant's RCE filed on 08/02/2010. In a telephonic interview on August 27, 2010, examiner provided Mr. Ronald J. Ward, Reg. No. 54,870 with a list of claims including allowable subject matters to prepare an examiner amendment issuing an allowance for the instant application. Mr. Ward did not agree with the examiner suggestion.

Response to Arguments

Applicant's arguments with respect to the rejection claims under *35 USC § 103* have been considered but are moot in view of the new ground(s) of rejection.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claim 25 recites "a controller configured to authenticate the fiber optic transceiver...without using the network communication channel". Applicant in his remarks filed on 02/11/2010 has not indicated that where the specification describes this limitation. Examiner could not locate any support in the specification for "without using the network communication channel".

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 2432

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 25-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 25-28 use the phrase "means for", but it is modified by some structure, material, or acts recited in the claim. It is unclear whether the recited structure, material, or acts are sufficient for performing the claimed function which would preclude application of 35 U.S.C. 112, sixth paragraph, because the specification does not provide any specific structure closely associated to the recited functions in these claims. For instance, there are no descriptions in the disclosure for means that is used for "transmitting data signals to an external device over a network communications channel, the transmitted data signals being representative of data received from a local host", for means that is used for "receiving data signals from the network communications channel and transmitting corresponding signals representative of the received data signals to the local host", for means that is used for "converting optical serial data into electrical serial data" and for means that is used for "converting electrical serial data into optical serial data". One skilled in the art cannot know what structure is meant for "means for" since no algorithms for performing the functions are described.

A general allegation that these are simple programs that one skilled in the art can make is not sufficed. In order to meet the requirements for a claim in "means plus function" format the relevant algorithms should be disclosed in the specification. If applicant wishes to have the claim limitation treated under 35 U.S.C. 112, sixth

Art Unit: 2432

paragraph, applicant is required to amend the claim so that the phrase "means for" or "step for" is clearly **not** modified by sufficient structure, material, or acts for performing the claimed function.

If applicant does **not** wish to have the claim limitation treated under 35 U.S.C. 112, sixth paragraph, applicant is required to amend the claim so that it will clearly not be a means (or step) plus function limitation (e.g., deleting the phrase "means for" or "step for").

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aronson et al (US 2003/0128411 A1), hereinafter Aronson, in view of Walmsley et al (US 2003/0172268 A1), hereinafter Walmsley.

Regarding claims 1 and 13, Aronson discloses a transceiver (Fig. 1) comprising:
an electrical interface configured to receive outgoing data signals from a host coupled to the transceiver and transmit incoming data signals to the host (Fig. 1, signals 14, 15, 16...);
a host (see, e.g., [0001]);

Art Unit: 2432

an interface electrically coupled to the host (see, e.g., [0015], [0029] and [0030]); and
a transceiver comprising:

a fiber optic transmitter configured to transmit the outgoing data signals received from the host via the electrical interface (see, e.g., Figs. 2 & 3 and [0028]);

a fiber optic receiver configured to receive the incoming data signals received from an external device over a network communication channel (see, e.g., Figs. 2 & 3 and [0028] and [0045], where the end user corresponds to the recited external device); and

a controller that supply signals to the host via the electrical interface (see, e.g., Fig. 2, 110 and [0028]).

Aronson does not expressly disclose:

a controller configured to encrypt a string and supply the encrypted string to the host via the electrical interface to authenticate the transceiver, and
authentication of the transceiver being contingent upon whether or not the transceiver has been certified by a manufacturer of the transceiver and/or a supplier of the transceiver as meeting a specified quality standard.

Walmsley, however, discloses a system for validating a chip that whether it is trusted (see [0332], where the chip corresponds to the recited controller and Fig. 1, where the chipA 10 acting as a controller installed on a device 12 which the device 12 corresponds to the recited transceiver; see also [0441], [0444]):

a controller configured to encrypt a string and supply the encrypted string to the host via the electrical interface to authenticate the transceiver (see, e.g., [0537], where the chipA

Art Unit: 2432

20 transmits encrypted string E.sub.K2[R] to the verifying system corresponding to the recited host and Fig. 5, arrow 53; see also [0641]), and

authentication of the transceiver being contingent upon whether or not the transceiver has been certified by a manufacturer of the transceiver and/or a supplier of the transceiver as meeting a specified quality standard (see, e.g., [0644], ChipA 20 is considered authentic and [0653], where when a chip is authentic and it is not a cloned one implies that it meets a specified quality standard and the device that includes the chip is certified by a manufacturer; see also [0003], [0008], [0251 and [1332])).

Thus, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to deploy a scheme to verify the authenticity of a transceiver that meets its manufacturer's specified quality standard as taught in Walmsley in the system of Aronson in order to prevent the use of a cloned transceiver (see Walmsley, [0388]).

Regarding claim 2, Walmsley discloses:

The transceiver of claim 1, wherein the controller is configured to encrypt the string with a transceiver private encryption key (see, e.g., [0487] and [0625]; Fig. 5, the K2 in arrow 53 and Fig. 7, the KA in arrow 73 are the private keys of the ChipA).

Regarding claim 3, Walmsley discloses:

The transceiver of claim 1, wherein the controller is configured to use a transceiver private encryption key and a transceiver public encryption key to authenticate the transceiver (see, e.g., [086]-[0487] and [0624]-[0625]).

Art Unit: 2432

Regarding claim 4, this claim is rejected as applied to the rejection of claim 2.

Regarding claims 5 and 6, Walmsley discloses:

The transceiver of claim 3, wherein the transceiver public encryption key is sealed by encrypting the transceiver public encryption key with a system private encryption key and stored as a sealed transceiver public encryption key (see, e.g., [0079], [0089], [0137] and [0189], where Walmsley teaches an alternative that uses digital signature and public key certificates for authentication which meet the limitations of these claims).

Regarding claim 7, Walmsley discloses:

The transceiver of claim 1, wherein the controller comprises an electrically erasable and programmable read only memory that is used to store a transceiver private encryption key and a transceiver public encryption key (see, e.g., [0347], [0352], [0408]-[0409] and [0416]).

Regarding claim 8, Walmsley discloses:

The transceiver of claim 1, wherein the controller comprises a cryptography module for encrypting the string (see, e.g., [0336], [0337], [0537] and [0641], where the ChipA performs encryption and decryption which implies that it includes a cryptography module).

Regarding claim 9, Walmsley discloses:

Art Unit: 2432

The transceiver of claim 1, wherein the controller comprises an RSA encryption module for encrypting the string (see, e.g., [0075]).

Regarding claim 12, Aronson discloses:

The transceiver of claim 1, wherein the transceiver comprises a small form factor pluggable transceiver (see, e.g., [0002], handheld).

Claims 13-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aronson et al (US 2003/0128411 A1), hereinafter Aronson, in view of Walmsley et al (US 2003/0172268 A1), hereinafter Walmsley as applied to claims 1-9 and 12 above and further in view of Liu et al (US 2004/0249817 A1).

Regarding claims 13, 22, 25, 29, 32 and 36, Walmsley-Aronson teachings are applied to reject the limitations of claims 13 and 22 that are similar to limitations of claim 1, but

Walmsley-Aronson does not expressly disclose:

wherein the controller is configured to encrypt the string using a host-selectable one of a plurality of transceiver private encryption keys stored in the transceiver (claim 13), and wherein the controller stores a first unique transceiver-specific public key/private key pair for authentication, the first unique transceiver-specific public key/private key corresponding with a manufacturer of the transceiver (claim 22).

Liu discloses a system to verify the authenticity of a sender (i.e., a transmitting device) (see, e.g., [0028] and [0065]). Liu further discloses a scheme to verify the status of a particular public key of plurality of public keys stored in a repository (see [0009], [0024],

Art Unit: 2432

[0048], and [0094]) which means that Liu's system uses a valid public key selected from a plurality of public keys for a cryptographic operation. Liu further discloses that each public key has its own designated identifier (see, e.g., [0040]), and wherein the controller stores a first unique transceiver-specific public key/private key pair for authentication, the first unique transceiver-specific public key/private key corresponding with a manufacturer of the transceiver (see, e.g., [0049] and [0059], where the trusted third party corresponds to the recited manufacturer of the transceiver).

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to combine the teachings of Liu with the system of Walmsley-Aronson to select a valid public/private key pair from a plurality of public/private key pairs to perform encryption and decryption for the authentication of transceiver. This will ensure that a secure communication is carried out using a valid key (see Liu, [0209]).

Regarding claim 14, Aronson discloses:

The network system of claim 13, wherein the interface comprises an inter-integrated circuit bus (see, e.g., [0044], Fig. 2, 14, 15 and 16).

Regarding claim 15, Aronson discloses:

The network system of claim 13, wherein the interface comprises a transceiver fault status line (see, e.g., [0015], [0045] and [0058]).

Art Unit: 2432

Regarding claim 16, Aronson discloses:

The network system of claim 13, wherein the interface comprises a transceiver disable line (see, e.g., [0015]).

Regarding claim 17, Aronson discloses:

The network system of claim 13, wherein the interface comprises a transmit data in line TD+ and an inverted transmit data in line TD- (see, e.g., [0014], Fig. 2, TX+ and TX-).

Regarding claim 18, Aronson discloses:

The network system of claim 13, wherein the interface comprises a received data out line RD+ and an inverted received data out line RD- (see, e.g., Fig. 2, RX+, RX- and [0100], Table 4).

Regarding claim 19, Aronson discloses:

The network system of claim 13, wherein the interface comprises a loss of signal status line (see, e.g., [0011] and Fig. 2, 111 LOS).

Regarding claim 20, Aronson discloses:

The network system of claim 13, wherein the host is one of a mainframe computer, a workstation, a server, and a storage device (see, e.g., [0029] and [0075]).

Regarding claim 21, Aronson discloses:

Art Unit: 2432

The network system of claim 13, wherein the host is one of a bridge, a router, a hub, a local area switch and a wide area switch (see, e.g., [0029] and [0075], where the host is a computer corresponding to the a bridge, a router, a hub, a local area switch and a wide area switch).

Regarding claims 23 and 24, Liu discloses:

The transceiver of claim 22, wherein the first unique transceiver-specific public key/private key pair is associated with a first access code and the controller stores a second unique transceiver-specific public key/private key pair for authentication, wherein the second unique transceiver-specific public key/private key pair is associated with a second access code, and

The transceiver of claim 23, wherein the first unique transceiver-specific public key/private key pair is used for authentication in response to the host communicating the first access code to the controller and the second unique transceiver-specific public key/private key pair is used for authentication in response to the host communicating the second access code to the controller (see, e.g., [0040] , [0125] and [0133], where an identifier corresponding to the recited access code is designated to each pair of public key/private key and the identifier or an e-mail address is used to retrieve the associated public key for authentication purpose).

Regarding claims 26 and 27, Aranson discloses:

Art Unit: 2432

The fiber optic transceiver of claim 25, wherein the means for receiving data signals comprises means for converting optical serial data into electrical serial and the means for transmitting data signals comprises means that does the reverse operation (see [0002], [0044] and [0050]).

Regarding claim 28, Walmsley-Liu discloses:

The transceiver of claim 25, wherein the controller is further configured to encrypt an authentication string using a transceiver specific private key, the encrypted authentication string configured to be decrypted using a transceiver specific public key. See, e.g., Liu, [0049] and [0057].

Regarding claim 30, Liu discloses:

The method of claim 29, wherein the authentication signal comprises a certificate identification (see, e.g., [0032] and [0039]).

Regarding claim 31, Walmsley discloses:

The method of claim 29, wherein analyzing the authentication signal comprises decrypting the authentication signal using a public key of an issuing authority (see, e.g., [0079], [0089], [0137] and [0189]).

Regarding claim 33, Walmsley discloses:

The method of claim 32 comprising:

Art Unit: 2432

generating an original authentication string in the local host (see Fig. 7, EKT[R]);
sending the original authentication string from the local host to the transceiver (see Fig. 7, arrow 72);
encrypting the original authentication string in the transceiver using the transceiver specific private key (see Fig. 7, M I EKA[R I M]);
passing the encrypted authentication string from the transceiver to the local host (see Fig. 7, arrow 73); and
decrypting the encrypted authentication string in the local host using the transceiver specific public key (see Fig. 7 and [0643]).

Regarding claim 34, Walmsley discloses:

The method of claim 33 comprising:

comparing the decrypted authentication string to the original authentication string (see [0643]); and
selecting one of rejecting and accepting the transceiver based upon the comparison (see [0644]).

Regarding claim 35, Walmsley discloses:

The method of claim 33, wherein the original authentication string is a random number (see, e.g., [0631], where R is a random number).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See attached PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ABDULHAKIM NOBAHAR whose telephone number is (571)272-3808. The examiner can normally be reached on M-T 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system.

/A. N./
Abdulhakim Nobahar
Examiner, Art Unit 2432

/Gilberto Barron Jr./
Supervisory Patent Examiner, Art Unit 2432